Inhibition of human neutrophil function of pure compounds from *Ventilago harmandiana.*

Payong Wanikiat, Montakarn Chaiyodwong[1], Chalobon Yoosook[2], Kanda Panthong[3], Vichai Reutrakul[3]

[1]Department of Pharmacology, [2]Department of Microbiology, [3]Department of Chemistry, Faculty of Science, Mahidol University, Bangkok 10400.

Abstract

The crude methanol extract and pure compounds obtained from the heart wood of *Ventilago harmandiana* exhibited moderate to strong anti-inflammatory activity in the ethylphenylpropiolate (EPP) mouse ear edema model (unpublished data).

In the present study, the pure compounds, VR9178 and VR9180, obtained from the heartwood of *Ventilago harmandian* were investigated for their activities on neutrophil functions, including neutrophil chemotaxis, superoxide anion generation (SAG), myeloperoxidase production and elastase release. It was found that VR9178 (1-500 μM) and VR9180 (1-500 μM) inhibited fMLP-induced neutrophil chemotaxis in a concentration-dependent manner with $IC_{50} = 9.2 \pm 0.8$ μM and $IC_{50} = 73.2 \pm 10.4$ μM. respectively. Both VR9178 and VR9180 (1-500 μM) caused a concentration–related inhibition of fMLP-induced SAG with IC_{50} for VR9178 at 10.7 ± 2.4 μM and for VR9180 at 164.3 ± 15.5 μM. These concentrations of both pure compounds also inhibited fMLP-induced neutrophil myeloperoxidase production in a concentration-dependent manner with $IC_{50} = 26.5 \pm 0.4$ μM and $IC_{50} = 54.7 \pm 10.1$ μM, respectively. The results also showed the inhibitory effects of VR9178 (1-500 μM) and VR 9180 (1-500 μM) on elastase release, giving $IC_{50} = 28.6 \pm 6.3$ μM and, $IC_{50} = 122.8$ 17.0 μM, respectively. Furthermore, the cytotoxic effects of both pure compounds were investigated and it was found that cell viability was not significantly affected by the concentrations of the compounds used in these experiments as shown by MTT assay. These findings suggested that inhibition of human neutrophil function by VR 9178, not due to its cytotoxic activity, may be attributed, in part, to its anti-inflammatory activity.

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